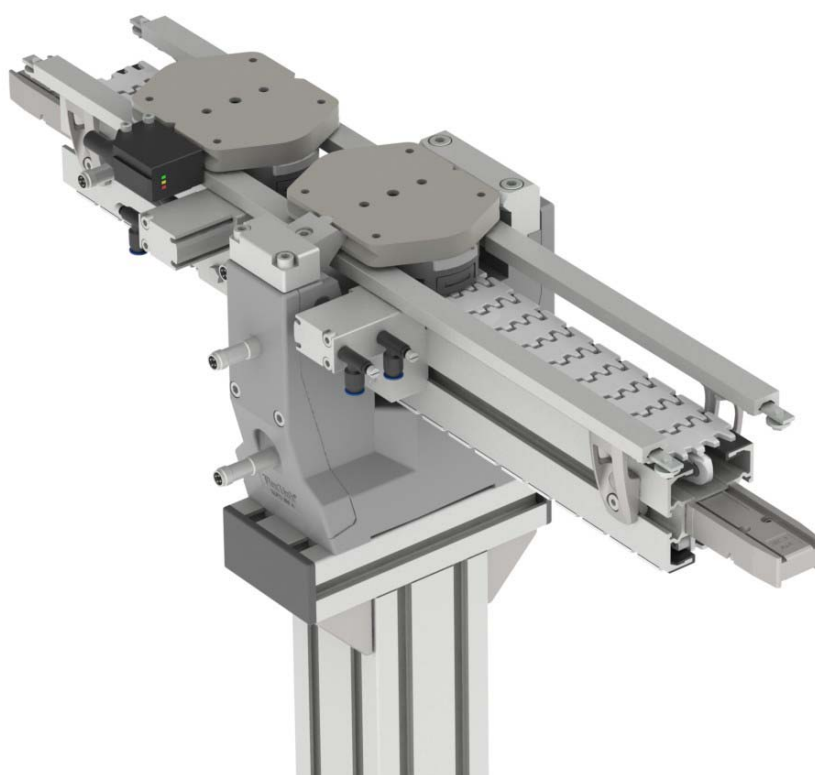


# X65 Locating module

## User Documentation





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## User Documentation

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## Preface

### Purpose of this manual

The purpose of this manual is to describe a number of operations that are intended for the user concerned. Here it becomes clear how the user can work as well and as safely as possible. By making use of clear illustrations and texts FlexLink wants to achieve a simple and safe way of working with the X65 locating module. This document contains remarks that point out a risky or specific situation to the user. In many cases this situation is provided with one of the symbols given below.



General warning for danger!



Warning for electrical voltage!



Attention, this is an important notice!

Compliance with the operations described in this document is important in order to prevent dangerous situations and unnecessary damage to the X65 system. Carefully keep this document! It is recommended to keep one copy near the conveyor system and one copy with your technical documentation.

### Structure of the manual

The user's manual has been composed in such a way, that a number of operations can quickly and easily be found. This manual will not describe operations that are not meant for the user. It does, however, indicate what the user must do when carrying out a certain operation, for example calling in technical staff. FlexLink would like to point out to the user that section 1 Safety is to be read carefully.

## Requirements of the user

The X65 Conveyor system may be operated by any adult person who has become acquainted with section 1 Safety. If the user is not technically qualified, he or she may not carry out any maintenance or repair activities on the system.



**Note!** *Maintenance activities on the system may only be carried out by a technically qualified person.*



**NB:** *Technically qualified employees means: employees that have followed an adequate training for carrying out the activities involved and have a good ability to read and understand the English language.*

# 1 Safety

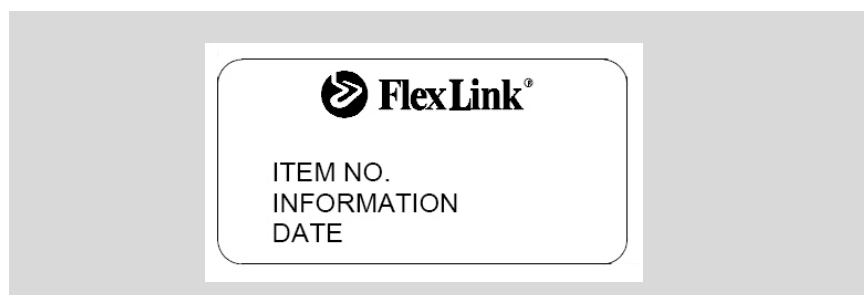
The X65 locating module has been designed in such a way, that it can be used and maintained in a safe way. This holds for the application, the circumstances and the instructions described in the manual. Any person working with or on this system should study the manual and follow the instructions. It is the responsibility of the employer to make sure that the employee is familiar with and follows these instructions.

The company or the country in which the system is used may require extra safety measures. This particularly applies to the working conditions. This manual does not describe how these are to be complied with. In case of doubt, consult your government or safety officer!

## 1.1 System information

The project number and/or general drawing number shall always be specified when communicating with FlexLink with respect to the module.

<b>Project number</b>	See module nameplate
<b>Module type:</b>	Module
<b>Date of manufacture</b>	See module nameplate
<b>Identification. no.</b>	See module nameplate



**Figure 1** Module nameplate

The modules nameplate is located on the module beam.

## 1.2 The most important safety conditions

At the moment that the X65 system is going to be operated by a user, the following safety conditions must be met:

- Only persons who have read and understood the operating instructions are allowed to operate, maintain and clean the system.
- Provide good ambient lighting to enable the operator to work well and orderly with the system.

### 1.2.1 General



- Incorrect use of the equipment can cause personal injury.
- Do not wear clothing or other articles that can fasten.
- Follow the instructions in this user manual when transporting the machine. FlexLink Components AB must approve all modifications or changes to this system.
- Only use recommended spare parts.
- Only authorised personnel may open electrical units.
- FlexLink is not responsible for damage if service on the equipment is not performed in accordance with this user manual.

### 1.2.2 Service technicians



Service technicians must have:

- Sufficient knowledge for reading technical information
- Ability to comprehend technical drawings
- Basic knowledge of mechanics
- Sufficient knowledge in the use of hand tools



### **1.2.3 Electricians**

Electricians must have:

- Experience from similar installations
- Sufficient knowledge to work from drawings and wiring diagrams
- Knowledge of local safety regulations for electrical power and automation

To avoid risks, only experienced personnel with technical knowledge and experience may perform repair work on the electronics components.



### **1.2.4 Operators**

To correctly use the equipment, operators must have appropriate training and/or experience.

## 1.3 Description of safety provisions

Before putting the system into operation some safety provisions are to be taken care of. The purpose of these safety provisions is to protect the user, the product and the system against undesired situations (damage). Without these safety provisions FlexLink cannot give a guarantee on any damage caused in absence of these safety provisions.

The table below gives a general description of the safety provisions required. Here it should be noted that only technically qualified employees are allowed to work on the settings of the safety provisions!



### 1.3.1 Noise level



The noise level produced by the X65 conveyor system is under 70 dB(A).



### 1.3.2 Power supply

Power such as electrical, pneumatic, etc.

Never bypass the safety system.

Before working on powered components (i.e. motors), pneumatic activators of power supply the main switch must be turned off and locked. The key is retained by the service technician until work is finished.

Examples of service work include:

- Disconnection of wiring/tubing
- Replacement of components, i.e. motors, etc.
- Service work performed on the machine that cannot be seen from the electrical cabinet.

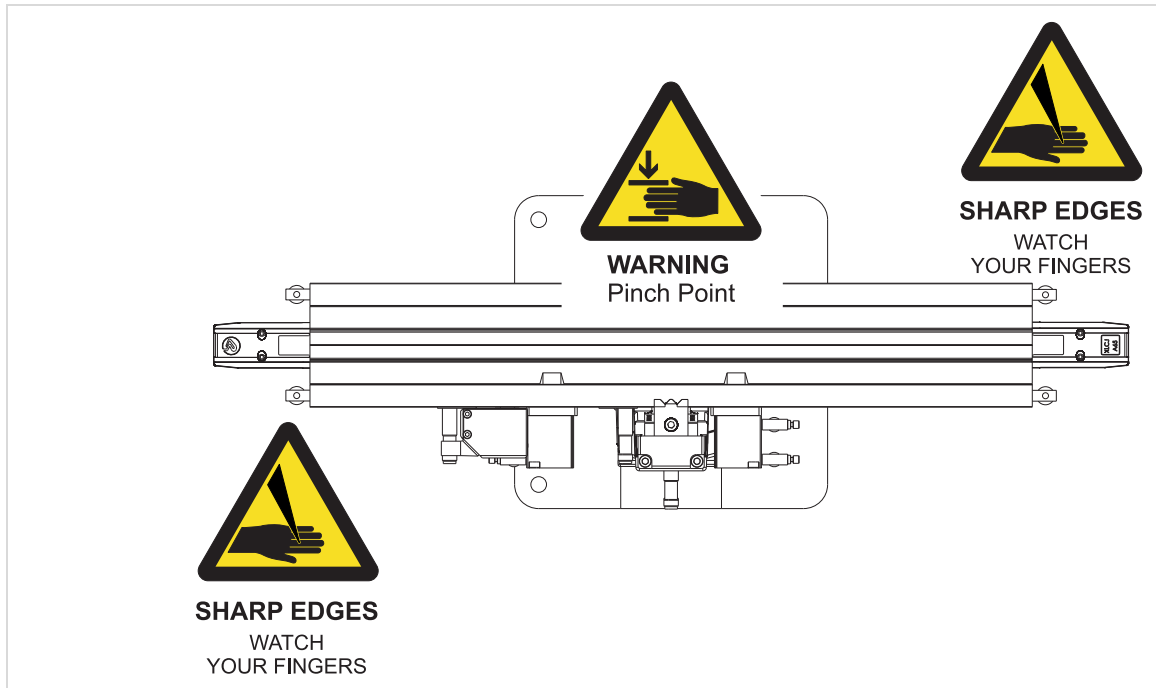
For adjustment of photo-electric cells, inductive sensors, etc., power is required:

- Stop the system and wait until the moving parts have come to a complete stop.

## 1.4 Safety information

For a safe operation of the conveyor system a number of safety measures are to be taken. These include the following measures:

### 1.4.1 Power supply must be disconnected during installation (air and voltage).



**Figure 2** Sharp edges

## 1.5 Intended use

The X65 locating module is intended to be used with the X65 pallets, XLPP 100x128. All other use is the responsibility of the user.

## 2 Technical specification

### 2.1 Operating conditions

The circumstances under which the X65 conveyor system can be applied partly depend on the materials selected. FlexLink has defined a number of parameters within which the system would be allowed to function. Should the system still be applied beyond these limiting values, FlexLink cannot guarantee the good functioning of it.

Ambient temperature (in operation)	-20° to +35°C
During transport / storage	5 to +40°C
Relative air humidity (RH)	10% to 95%, not condensing
Lighting	Normal ambient lighting
Height	Up to max. 2000 m above sea level



## 2.2 Ordering information

Use the online configurator to order locating module. In the configuration process, sensor types and RFID readers are specified. If the optional support is chosen the height to top of pallet is also specified.

Question	Choices	Description code
<b>Support type</b>	None 64x64 88x88	None 64x64 88x88
<b>Top of pallet (TOP)</b>	500-1200 mm	500-1200 mm
<b>Sensors</b>	Yes/No	S/N
<b>RFID</b>	Yes/No	RF/N

### Configuration example

Example of configurator string: 128-64x64-1000-S-RF

The choice sensor "Yes" includes sensors and brackets for indicating:

- Pallet in pre-stop position
- Pallet in position
- Locating up/down

The choice sensor "No" includes:

- Sensor brackets for pallet in pre-stop position
- Sensor bracket for pallet in position

The choice RFID "Yes" includes:

- Read/write head (5058152)
- Read/write head bracket (8050112)

## 3 Functions

### 3.1 Function description

Locating modules are components for positioning pallets in preparation for operations such as assembly, machining or testing.

The pallets are stopped by a pneumatically controlled stop device near the desired position. A proximity switch is used to indicate that a pallet is in the locating station. A locating cross wedge is activated to one side of the pallet lifting the pallet against a V-ruler on the opposite side of the pallet. The locating accuracy is within  $\pm 0,1$  mm.

The location module is delivered complete with conveyor beam, guide rails and guide rail brackets for M12 sensors, for installation into a conveyor line. The sensor for pallet in locating position is always included but other sensors, supports and RFID readers are optional.

Excluded parts:

- Chain
- Slide rails for chain and guide rails
- Tubes for pneumatic circuit
- Pallets
- Cables (for sensors and RFID r/w head)

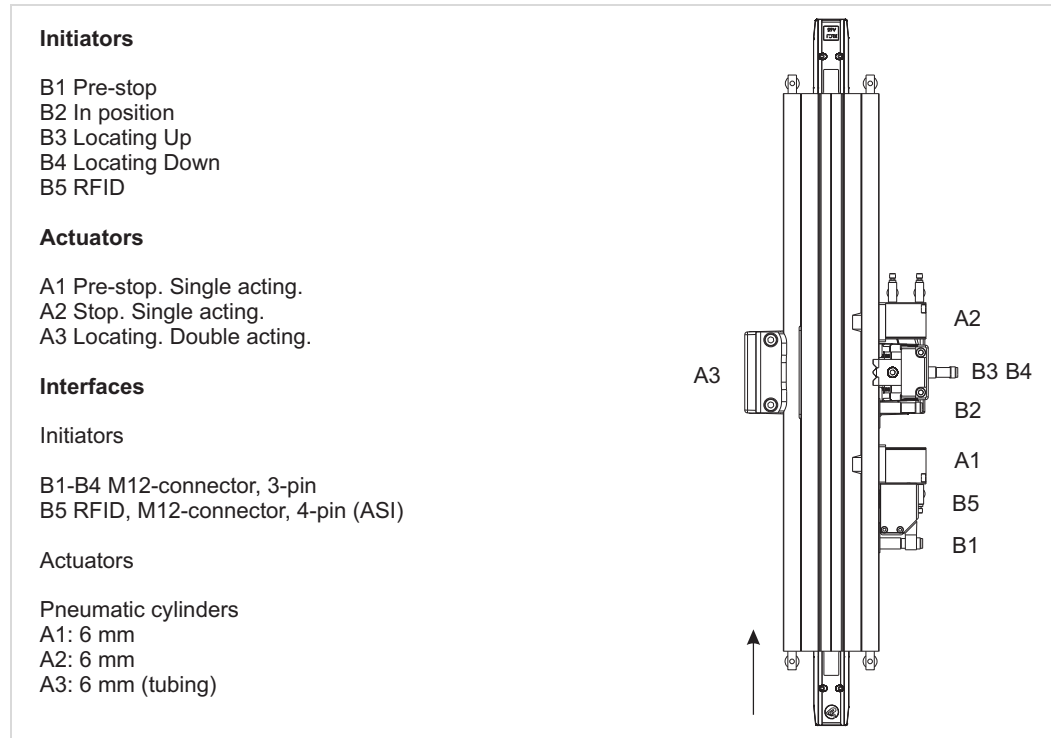
The locating station is divided into Pre-stop position and Process position.

Pre-stop position

At the pre-stop position pallets are stopped if the process position is occupied. The RFID-reader at the pre-stop can by identifying the pallets increase the efficiency by letting those with an other destination pass quickly.

Process position

The process position receives one pallet at the time from the pre-stop. If the pallet should be processed, it is caught by the integrated stop. Once it is located the process will start.



## Principle of operation

### Straight passing through

A pallet is approaching. The pallet activates sensor **B1** which actuates stop **A1** which stops the pallet if function area is occupied. Sensor **B2** supervise the locating area. If the sensor gives low signal the area is empty.

### Function occupied

Before a pallet is let into the function area the locating station must be empty and open. Example: Pallet enters module. Stop **A1** blocks the flow, then waits until **B2** does not detect a pallet and **B4** detects that locating station is open. Then pallet is released by stop **A1**.

### Sensors

The primary function of sensor **B2** (in position) is to detect pallet placed in a specific position. The sensor is placed so it can actuate stop (open/blocking) before the pallet reaches the function area. Maximum conveyor speed is 20 m/min.

### RFID

The RFID head **B5** is used for reading/writing RFID tag data on pallets. The data holds information whether a pallet should be processed or not.

## 3.2 Cylinder details

### Cylinder A1 "Pre-stop"

Type: Double acting with spring return

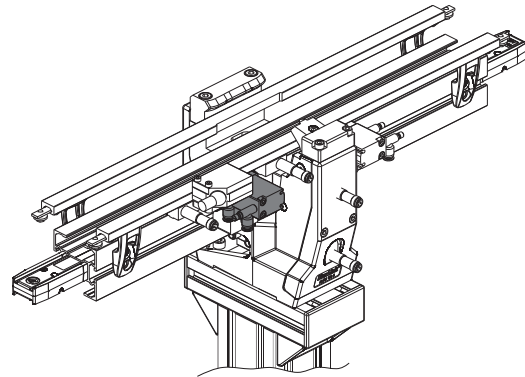
Function:

- Pressurized: Releases the pallet flow
- No pressure: Blocks the pallet flow

For safety reasons, the pallet stop is blocking the flow in case of a pressure drop, preventing pallets from travelling uncontrolled along the conveyor.

The stop should not re-block the flow while a pallet puck is in a position where it could be clamped.

It is recommended to re-block the flow after each pallet.



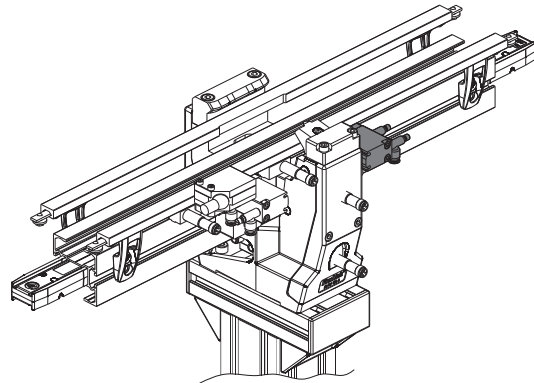
### Cylinder A2 "Stop"

Type: Double acting with spring return

Function:

- Pressurized: Releases the pallet flow
- No pressure: Blocks the pallet flow

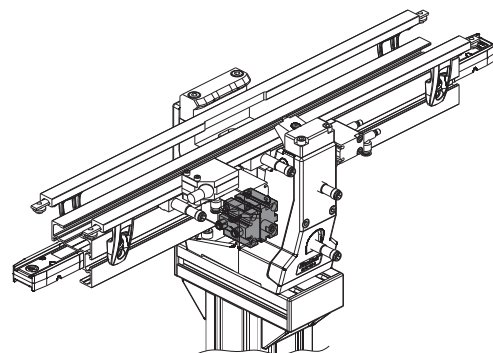
For safety reasons, the pallet stop is blocking the flow in case of a pressure drop, preventing pallets from travelling uncontrolled along the conveyor.



### Cylinder A3 "Locating"

Type: Double acting

Function: Locates the pallet



### 3.3 Sensor details

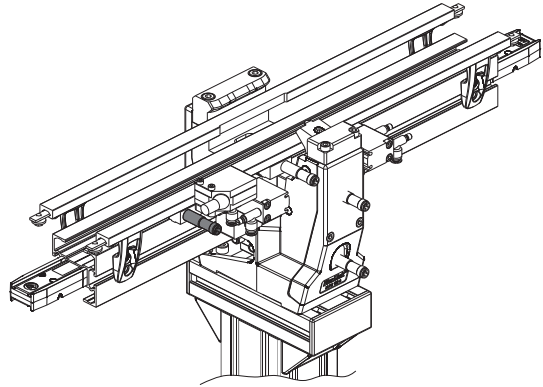
#### Sensor B1 "Pre-stop"

Type: Proximity switch, inductive

Position: Placed together with Pre-stop.

Function: Detects the initiator plate of the pallet before the pallet is stopped and stays active until the pallet leaves the stop.

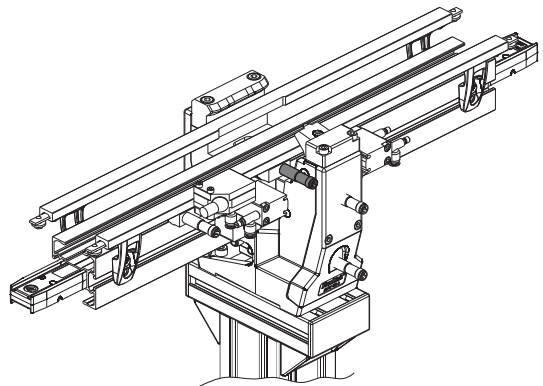
The reason why the pallet is detected by the sensor before the pallet hits the stop, is to enhance the efficiency of the pallet flow. As the pallet is detected in advance, the controller has time to take a decision whether or not the pallet should be stopped. If it should pass, the stop changes state to "Release flow" before the pallet reaches it.



#### Sensor B2 "In position"

Type: Proximity switch, inductive.

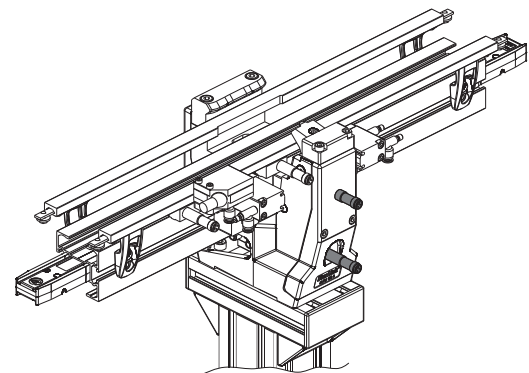
Function: Detects the pallet initiator plate when the pallet is stopped in the process position.



#### Sensor B3 and B4 "Locating up/down"

Type: Proximity switch, inductive

Function: Activated then the pallet is located/ released.



## 4 Unload the X65 locating module

### 4.1 Preparation

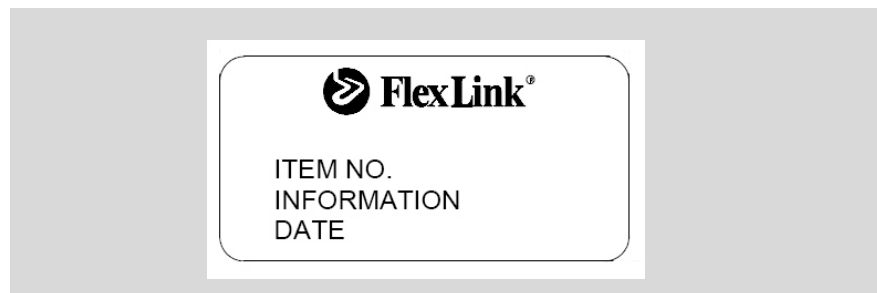
This section describes the steps that are required for unloading the modules for the X65 system. It is recommended to make use of the devices described. When using this or another device this device is expected to be provided with a quality mark.



**Note!** *The operations concerned are to be carried out calmly in order to be able to carefully monitor any movement of the X65 module.*

Before starting the unloading a good preparation is required. The appropriate devices must be available. Apart from that the first transport check is an important part of the unloading, as in case of damage this should be mentioned on the delivery note in relation to guarantee and the like.

After arrival of the modules a transport check is to be carried out. The check can be carried out at the moment the module has been unloaded from the container or the truck. The technical specification gives the dimensions to be checked. Is the module delivered undamaged and is it the correct module?



**Figure 3** Module serial number type plate with configurator string



**Note!** *Any damage is to be mentioned on the delivery note and should immediately be reported to the supplier. This with respect to the guarantee of the module.*

## 4.2 Unloading instructions

Before starting unloading, all fastening means (securing belts, screws, etc.) that secure the module into the means of transport must be removed. Subsequently check whether the transport supports are still connected well to the module. After this the unloading procedure may be started.

### 4.2.1 Introduction

#### 4.2.1.1 *Accessories and spare parts*

Spare parts for the X65 modules can also be ordered. See [Recommended spare parts on page 19](#)

#### 4.2.1.2 *Ordering process*

Every X65 module has its own unique order code which can be found in each module description. The various options available for each module are shown in the order code and all the parameters have to be specified when ordering.

It is important to know that by ordering for example a conveyor module, you do not automatically get a support module. This has to be ordered separately.

#### 4.2.1.3 *Shipment*

Modules are delivered in std eur pallet 1200x800.

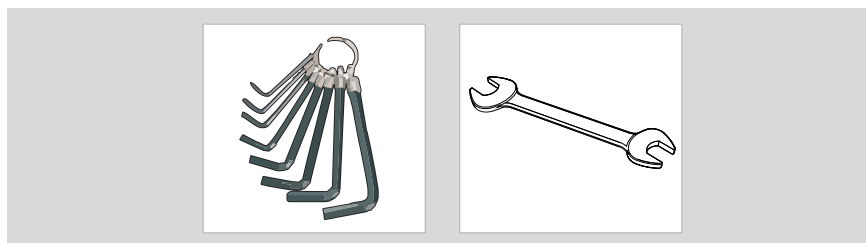




## 5 Mounting, installation, adjustment

This section deals with the operations to have the modules function well within a (transport) system. First section 1.2 on page 4, in which the provisions to be taken care of are given, should be studied carefully. section 1.3 on page 6 is particularly important for the modules that are delivered to the end user not fully assembled.

### 5.1 Recommended tools



**Figure 4** Tools

### 5.2 Basic value, Torque for dimension

Basic value, Torque for dimension			
M5	M6	M8	M10
4 Nm / 35 lb. in.	9 Nm / 80 lb. in.	24,5 Nm / 217 lb.in.	45 Nm / 398 lb.in.

**Figure 5** Basic value

Make sure before integrating (section 1.4 on page 7) that the surroundings are clean and free from obstacles and the mounting surface is clean and level. Besides, it should be repeated that the operations are to be carried out in a calm and controlled way!

After having placed the modules in the correct position, the modules is to be fastened to the mounting surface by using the holes in the adjusting feet.



## 5.2.1 Mounting instruction, XLUT 45 D and XLUT 90 D

### SAFETY



**WARNING**  
The system must not be operated without safety equipment properly mounted.



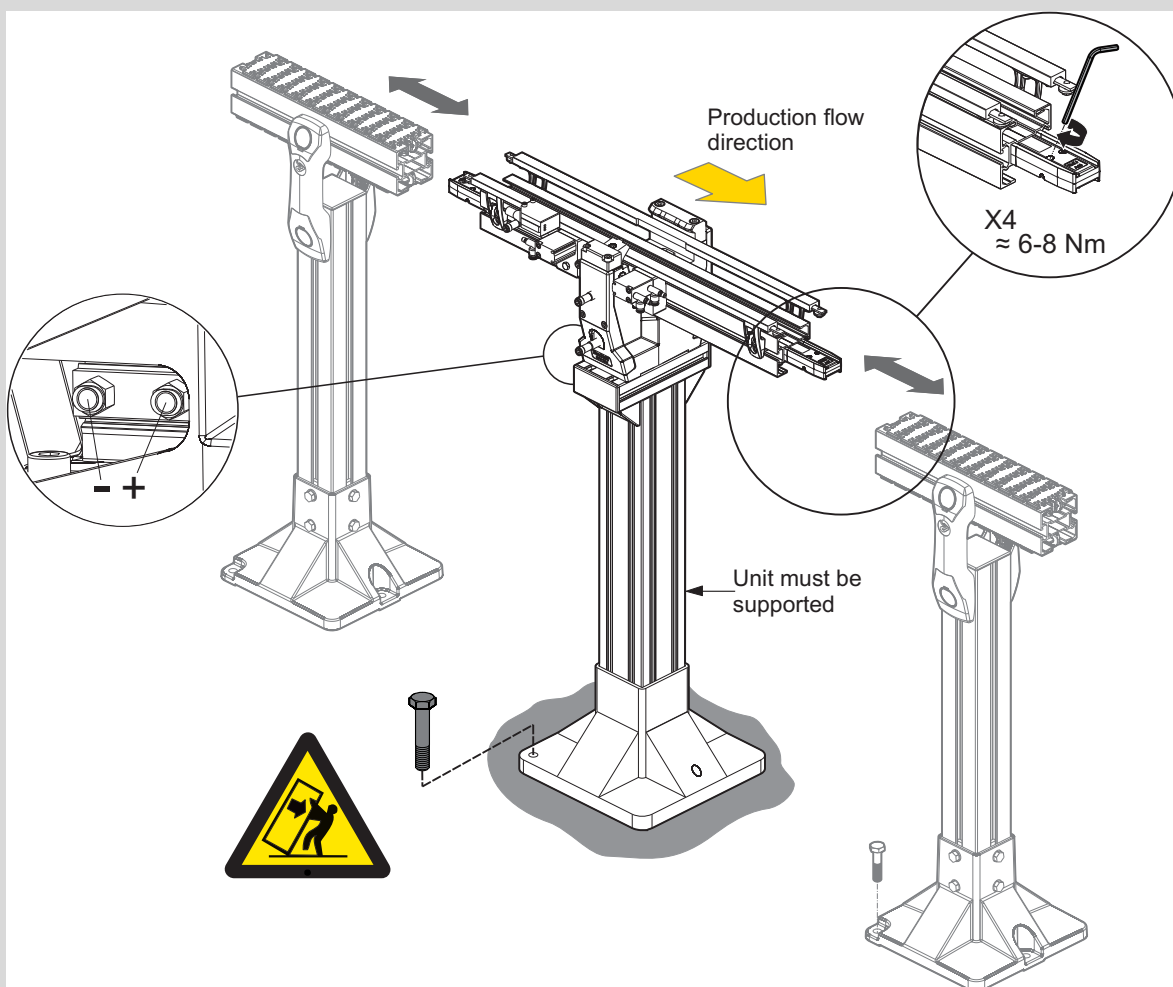
**WARNING**  
At installation, maintenance and service, make sure the motor is shut off.



**WARNING**  
Pinch Point



**CAUTION**  
Due to heavy weight - 2 person lift, or mechanical lift equipment.



## 6 Put out of commission

At the moment a module is put out of operation for some reason, a number of steps are to be taken in order to avoid dangerous situations. This section clearly indicates how one should proceed in a number of cases with respect to uncoupling, dismantling, transport and reuse of materials coming from the elevator

### 6.1 Disconnect the power sources

Prior to starting the dismantling, the voltage is to be cut off from the power source. First the main switch is to be switched off before the power source can be disconnected.



**Danger:** *First switch off the main switch before the power source may be disconnected.*

### 6.2 Disassemble

While dismantling the machine, the regulations for waste processing applicable on the place and at the time of the dismantling are to be complied with. The machine only contains commonly known materials. At the time of assembling the module there were processing possibilities for this and no particular risks were known for persons involved in dismantling. The disassembly of the module generally requires few operations. The module can be disposed of in the same way as it was delivered.



**Note!** *At the time of assembling the modules there were processing possibilities for this and no particular risks were known for persons involved in dismantling. Dust, dirt and liquids can accumulate in different cavities in the module. Use appropriate personal protection during disassembly.*

### 6.3 Reuse

No fixed rules have been made up for reuse of the modules, because the module does not contain any hazardous substances. At the time of assembling the module there were processing possibilities for this and no particular risks were known for persons involved in the reuse.



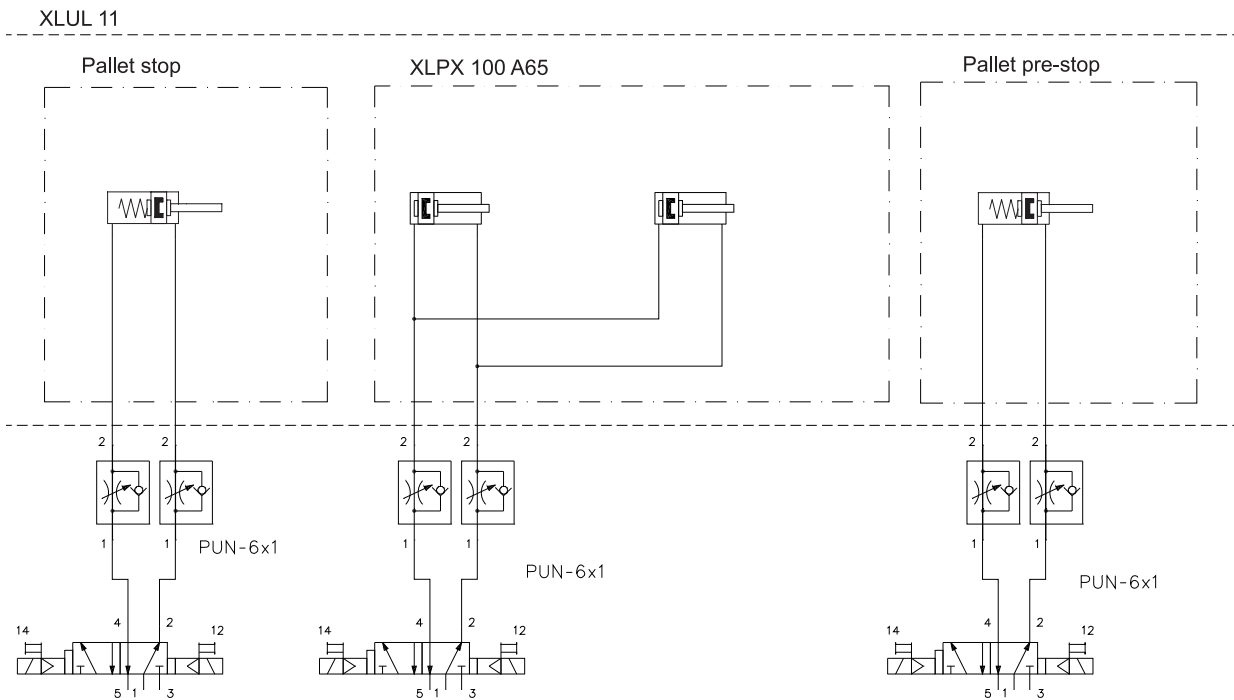
**Note!** *Putting the module out of operation with all operations involved may only be done by technically qualified personnel.*

## 7 Recommended spare parts

Description	Std name	Manufacturer	Type	External order no	FlexLink order no.
Pre-stop initiator	Sensor	SICK	IM12-08NPS-ZC1	7900045	5058572
Sensor bracket for Pre-stop initiator	Sensor bracket	FlexLink	-	-	XLPB 12 H
RFID reader/writer	RFID r/w	IFM Electronic	-	DTA100	5058152

## 8 Drawings

### 8.1 Pneumatic drawing



## 9 Supplier's information

This manual goes together with the module of the type mentioned on the order and on the title page of this manual. This document was drawn up by:

FlexLink Components AB

Date: 2013/03/11

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		www.FlexLink.com



**Note!** *In case of failures please contact the system integrator.*

## EC Declaration of Incorporation

### Partly complied machinery

**FlexLink Components AB**  
**SE-41550 Göteborg**  
**Sweden**

We hereby declare that the following equipment is intended to be incorporated into a FlexLink conveyor system and thereby forming a machine. Operation is prohibited until it has been determined that the machine in which these products are incorporated, has been declared in conformity with the Machinery Directive 2006/42/EC, together with amendments which have entered into force as of the date of issue of this declaration, with particular reference to the essential health and safety requirements in connection with the design, construction and manufacture of the below specified equipment.

#### **Locating module X65**

- XLUL 11

According to 2004/108/EC Electromagnetic Compatibility Directive (EMC), the listed device is not independently operable product, but intended as part of a given fixed installation. Compliance of the directive requires the correct installation of the product, the observance of specific installation notes and product documentation.

FlexLink Components AB



Svante Anderholm  
Chief Operating Officer

FlexLink Components AB

Fredrik Sandinge  
Responsible Technical file

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